



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,265	08/28/2000	Chih-Yuan Chang	LUCENT-01500	6764

28960 7590 05/25/2004

HAVERSTOCK & OWENS LLP  
162 NORTH WOLFE ROAD  
SUNNYVALE, CA 94086

EXAMINER
----------

NGUYEN, HANH N

ART UNIT	PAPER NUMBER
----------	--------------

2662

DATE MAILED: 05/25/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/649,265

Applicant(s)

CHANG ET AL.

Examiner

Hanh Nguyen

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 3/04/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-6,9-19,22-28,30-33 and 36-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9,12-19,22,25-28,30-33,36,39-44,46-50,52-56 and 58-60 is/are rejected.
- 7) ☒ Claim(s) 10,11,23,24,37,38,45,51 and 57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28, 30, 36, 39, 40, 41, 54, 55, 56, 58, 60 are rejected under 35 USC 103(a) as being unpatentable over **Halton et al.** (US Pat. No. 6,697,346 B1) in view of **Halton et al.** (US Pat. No. 6,621,803 B2), and further in view of **Montpetit** (US Pat. No. 6,366,761 B1).

In claims 28 and 60, **Halton et al. (Pat. ' 346 B1)** discloses, in Fig.2, a time slots window 1 (generating one or more contention slots) comprising contention slots 2 ( slots in contention mode) and reservation slots 3 ( slots in reservation mode) for transmitting random access data from mobile devices 27, 28 to base device 26 (see Fig.7). The base device 26 allocates contention slots in contention mode and in reservation mode to mobile devices 27, 28 based upon on the number of mobile device attempting to access the network. If the number of contention based access slots is increased, the number of reservation based access slots is reduced; or vice versa (dynamically adjusting the number of contention slots to a change in the user requesting access). See col.col.8, line 45 to col.9, line 25 & lines 1-15 & col.7, lines 35-45 & col.16, lines 10-30. **Halton et al. (Pat. '346 B1)** does not disclose prioritizing the first number of contention slots and the second number of contention slots; a hub transmitting / receiving requests and assigning the portion of the requested bandwidth; end users transmitting request and receiving grants a portion of a bandwidth.

**Halton et al. (Pat. ' 803 B2)** discloses a random access time window in Fig.2 ( a plurality of slots) divided into groups of access slots 21, 22, 23. Each group of slots is mapped to a different priority class depend on QOS, current traffic level and the size such as number of access slots ( prioritizing the first number of contention slots and the second number of contention slots). See col. 5, lines 40-60.

**Montpetit** discloses a ground terminal requesting slots representing a portion of bandwidth to satellite unit (user node requesting a portion of bandwidth). The satellite unit receives the request, assigns the requested portion of bandwidth if the satellite has sufficient bandwidth (a hub transmitting / receiving requests and assigning the portion of the requested bandwidth). The bandwidth assigned is based upon priority status of ground terminal such as user with higher priority status is assigned first (prioritizing user requests). See Abstract.

Therefore, it would have been obvious to one ordinary skill in the art to combine the disclose of **Halton et al. (Pat. ' 803 B2)** with **Halton et al. (Pat. '346 B1)** in order to allocate slots to mobile users with high priority first to obtain negotiated QOS. When the number of reservation slots requests is reduced, the contention based slots can be adjusted dynamically for contention mode requests.

The combination of **Montpetit** with **Halton et al. (Pat. '346 B1)** ensures slots request and grant switched to users with negotiated QOS, priority status.

In claims 30, the limitation of this claim has been addressed in claim 28.

In claim 36, the limitation of this claim has been addressed in claims 9 and 22.

In claim 39, the limitation of this claim has been addressed in claim 12.

In claims 40 and 41, the limitations of these claims have been addressed in claims 13, 14 and 28.

In claim 54, **Halton et al.** (Pat. '346 B1) discloses in Fig.16, a buffer space wherein contention slots and reservation slots are set in thresholds (second number of contention slots are fixed, predetermined). See col.14, lines 1-25.

In claim 55, **Halton et al.** (Pat'346B1) does not disclose the first number of slots is prioritized ahead of the second number of contention slots. Since **Halton et al.** (Pat'803B2) discloses groups of access slots assigned corresponding different priorities, therefore, it would have been obvious to one ordinary skill in the art to either priority the first number of slots or the second number of slots depend on high or low priority.

Claims 31-33 are rejected under 35 USC 103(a) as being unpatentable over **Halton et al.** (US Pat. No. 6,697,346 B1) in view of **Halton et al.** (US Pat. No. 6,621,803 B2), in view of **Montpetit** (US Pat. No. 6,366,761 B1), and further in view of **Prieto, Jr. et al.**

In claims 31-33, **Halton et al.** (Pat'346 B1) does not disclose a percentage value is assigned to each of the slotted multiple access mode; the sum of the percentage value is 100%, the percentage value is a dynamically changing value. **Prieto, Jr. et al.** discloses each user requesting slot is reserved a fraction of available bandwidth (a percentage value is assigned to each of the slotted multiple access mode). See col.10, lines 15-20. User one has 50% of the bandwidth, users 2 & 3 has 25% of the bandwidth each (sum of the percentage value is 100%). See col.10, lines 40-45. The percentage of the bandwidth may be changed in accordance with rate, network load (the percentage value is a dynamically changing value). See col.10, lines 45-

65. Therefore, it would have been obvious to one ordinary skill in the art to modify the **Halton et al. (Pat'346 B1)** by allocating users requests to fractions of available bandwidth using **Prieto, Jr. et al.**

Claims 1, 3, 15, 16, 42, 43, 44, 46, 48, 49, 50, 52 are rejected under 35 USC 103(a) as being unpatentable over **Halton et al.** (US Pat. No. 6,697,346 B1) in view of **Halton et al.** (US Pat. No. 6,621,803 B2) .

In claims 1, 3, 15 and 16, **Halton et al.** discloses, in Fig.2, a time slots window 1 (generating one or more contention slots) comprising contention slots 2 ( slots in contention mode) and reservation slots 3 ( slots in reservation mode) for transmitting random access data from mobile devices 27, 28 to base device 26 (see Fig.7). The base device 26 allocates contention slots in contention mode and in reservation mode to mobile devices 27, 28 based upon on the number of mobile device attempting to access the network. If the number of contention based access slots is increased, the number of reservation based access slots is reduced; or vice versa (dynamically adjusting the number of contention slots to a change in the user requesting access). See col.col.8, line 45 to col.9, line 25 & lines 1-15 & col.7, lines 35-45 & col.16, lines 10-30. **Halton et al. (Pat. '346 B1)** does not disclose prioritizing the first number of contention slots and the second number of contention slots. **Halton et al. (Pat. ' 803 B2)** discloses a random access time window in Fig.2 ( a plurality of slots) divided into groups of access slots 21, 22, 23. Each group of slots is mapped to a different priority class depend on QOS, current traffic level and the size such as number of access slots ( prioritizing the first number of contention slots and the second number of contention slots). See col. 5, lines 40-60. Therefore, it would have been

obvious to one ordinary skill in the art to combine the disclose of **Halton et al. (Pat. ' 803 B2)** with **Halton et al. (Pat. '346 B1)** in order to allocate slots to mobile users with high priority first to obtain negotiated QOS. When the number of reservation slots requests is reduced, the contention based slots can be adjusted dynamically for contention mode requests.

In claims 42, 48 , **Halton et al. (Pat. '346 B1)** discloses in Fig.16, a buffer space wherein contention slots and reservation slots are set in thresholds (second number of contention slots are fixed, predetermined). See col.14, lines 1-25.

In claims 43, 49 and 55, **Halton et al. (Pat'346B1)** does not disclose the first number of slots is prioritized ahead of the second number of contention slots. Since **Halton et al. (Pat'803B2)** discloses groups of access slots assigned corresponding different priorities, therefore, it would have been obvious to one ordinary skill in the art to either priority the first number of slots or the second number of slots depend on high or low priority.

Claims 4-6, 9, 12-14, 17-19, 22 and 25-27 are rejected under 35 USC 103(a) as being unpatentable over **Halton et al. (US Pat. No. 6,697,346 B1)** in view of **Halton et al. (US Pat. No. 6,621,803 B2)** in view of **Prieto, Jr. et al. (US Pat. No. 6,381,228 B1)**.

In claims 4, 5, 6, 17, 18 and 19, **Halton et al. (US Pat. No. 6,697,346 B1)** does not disclose a percentage value is assigned to each of the request and grant and contention mode; the sum of the percentage value is 100%, the percentage value is a dynamically changing value. **Prieto, Jr. et al.** discloses each user requesting slot is reserved a fraction of available bandwidth (a percentage value is assigned to each of the slotted multiple access mode). See col.10, lines 15-20. User one has 50% of the bandwidth, users 2 &3 has 25% of the bandwidth each (sum of the

percentage value is 100%). See col.10, lines 40-45. The percentage of the bandwidth may be changed in accordance with rate, network load (the percentage value is a dynamically changing value). See col.10, lines 45-65. Therefore, it would have been obvious to one ordinary skill in the art to modify the **Halton et al. 's system** by allocating users requests to fractions of available bandwidth.

In claims 9 and 22, **Halton et al. ('Pat 346 B1)** does not disclose a queue in a weighted fair queue for generating one or more contention slots. **Prieto, Jr. et al.** discloses scheduler 62 is a packet fair queue algorithm that stores reservation requests (a queue in a weighted fair queue). See col.9, lines 40-65. Therefore, it would have been obvious to one ordinary skill in the art to modify the **Halton et al. ('Pat 346 B1)** by having a scheduler that queues reservation request in a fair weighted queue.

In claims 12 and 25, **Halton et al. (Pat' 346 B1)** does not disclose the weighted fair queue to adjust the rate of generating contention slots automatically. **Prieto, Jr. et al.** discloses scheduler 62 is a packet fair queue algorithm that adjusts the service rates to allocate bandwidth to users (the weighted fair queue to adjust the rate of generating contention slots). See col.10, lines 40-50. Therefore, it would have been obvious to one ordinary skill in the art to modify the **Halton et al. (Pat. '346 B1)** by having a scheduler that adjust the rate for allocating slots to users.

In claims 13, 14, 26 and 27, the limitations of these claims have been addressed in claims 1 and 15.

In claims 44, 50 and 56, the limitations of these claims have been addressed in claims 1, 15 and 28.



In claims 46, 52 and 58 , the limitations of these claims have been addressed in claims 1, 15 and 28.

Claims 47, 53 and 59 are rejected under 35 USC 103(a) as being unpatentable over **Halton et al.** (US Pat. No. 6,697,346 B1)

In claims 47, 53 and 59, **Halton et al.** (Pat'346B1) does not disclose that if the user does not continue to make request, the contention slot associated with the user is removed to reduce the number of contention slots. It is a well-known skill in the art to release a contention slot for other user when its associated user is not requesting. Therefore, it would have been obvious in Halton et al. (Pat'346B1) to release the contention slot of the associated user not using the contention slot. The purpose of releasing the unused slot is to assign to other users.

#### *Response to Arguments*

Applicant's arguments with respect to claims 1, 3-6, 9, <sup>12</sup>11-19, 22, 25-28, 30-33, 36, 39-44, 46-50, 52-56 and 58-60 have been considered but are moot in view of the new ground(s) of rejection.

#### *Allowable Subject Matter*

Claims 10, 11, 23, 24, 37, 38, 45, 51, 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claims 10, 23 and 37, the prior art does not disclose two new requests for generating contention slots are placed in the weighted fair queue when a collision occurs between two users.

In claims 45, 51 and 57, the prior art does not disclose if multiple new user access requests cause a collision, a number of additional contention slots are generated according to the request and grant made, such that the number of additional contention slots corresponds to at least a number of the multiple user access requests causing the collision thereby increasing the first number of contention slots by the number of additional contention slots.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ahmadi et al. (US Pat. No. 5,384,777) discloses Adaptive Medium Access Control Scheme for Wireless LAN.

Hall (US Pat. No. 5,499,243) discloses Method and Apparatus for Coordinating Transfer of Information Between a Base Station and a Plurality of Radios.

Bauchot (US Pat. No. 5,970,062) discloses Method and Apparatus for Providing Wireless Access to an ATM network.

Heide (US Pat. No. 5,677,909) discloses Apparatus for Exchanging data Between a Central Station and a plurality of Wireless Remote Stations on a Time Divided Communication Channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday from 8AM to 5PM. The examiner can also be reached on alternate

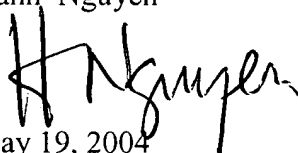
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 703 306-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2662

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen

A handwritten signature in black ink, appearing to read 'H. Nguyen', written over the printed name.

May 19, 2004